Tennessee Pollution Prevention Partnership Success Story

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Cougars Collect Hazardous Materials

The Member

Centennial High School's Environmental Science classes, under the direction of Jeff Taylor, perform hands-on projects inside and outside the school. Through these projects, all three classes learn about the environment and human impacts people on the environment. The classes are broken down into 12 student-lead teams. Each team has specific environmental goals, such as recycling, litter pick-up, erosion control, research, public relations, the greenhouse, campus beautification, energy conservation, and the pond. These teams identify and work toward their goals all year to create a better environment on campus and in the local community.

The Story

Since students are not usually involved with collecting and taking care of hazardous materials at school, the students had a lot to learn. During their introduction to land and water conservation, they learned *why* it was important to keep hazardous materials out of our water supply and environment. Then they researched about hazardous materials. What they had not realized was how these products are often part of their everyday lives.

They looked around the school at pest control, art and science supplies, and cleaning supplies. They talked to the pest control company to find out what chemicals are being used at the school. They found out that a combination of pesticides, sticky traps, and bait traps are used. Chemicals are not sprayed when students are present. Next they talked to the art and science teachers. The art teachers have switched to non-toxic and low VOC paints in their classes. Occasionally, the teachers use oil-based paint, which requires solvent for clean up. Covered cans of paint thinner are stored until the end of the year when a chemical company removes hazardous waste from the school. The science teachers have locked storage rooms for their chemicals, with flammable chemicals stored in metal cabinets. All chemicals are inventoried and accounted for by the department head. The chemical company also removes the outdated and used chemicals from the science department at the end of each school year. The storage rooms have exhaust fans to the outside, and science experiments are performed under vented hoods.

Lastly, the students spoke to the janitorial staff. The janitors gave the students a list of chemicals used at the school. Cleaning chemicals are diluted, and wastewater is disposed down the drain, not on the ground. All cleaning chemicals are labeled and stored in locked storage rooms with exhaust fans.

Still searching for a Hazardous Materials project, the students looked toward Williamson County's Household Hazardous Waste Collection Day, May 1, 2004. They contacted the coordinator to find out what hazardous materials are considered recyclable. They found out that batteries are recyclable. Environmental Science classes use about 10 batteries per week in the hand-held radios. They researched what is in batteries and found that the EPA does not consider alkaline batteries to be a hazardous material, only nickel-cadmium and lithium batteries are considered hazardous. Those types of batteries are found in watches, keyless car remotes, cell phones etc. They contacted TDEC and found that in the state of Tennessee, alkaline batteries are considered hazardous. Once left in a landfill they corrode and leak metals. The batteries are even explosive hazards if they are smashed or caught on fire. The students then began a campaign in the school for household battery collection. Each 6th period class competed against one another, with a pizza party as their reward.

The Success

The battery recycling campaign took place over a 3-month period and was a huge success. The students and faculty of Centennial High collected 4,312 batteries and diverted them from the landfill. The batteries were dropped off at the Household Hazardous Waste Day on May 1st, 2004. The batteries will be sorted into rechargeable and non-rechargeable. All rechargeable batteries will be refurbished and the regular batteries will be separated into different metals and recycled.

The Pollution Prevented

Because batteries contain metals, such as copper, zinc, nickel, manganese, mercury, cadmium, lithium and lead, the potential exists for these metals to leach into groundwater and the environment while in the landfill. When landfills are burned, the metals vaporize and return with rain to lakes and streams. The collection of 4,312 batteries aids in the exclusion of hazardous metals from Tennessee's environment.

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